

# AMERICAN VETERINARY REVIEW,

JULY, 1888.

## EDITORIAL.

SPINAL MENINGITIS OR INFECTIOUS PARAPLEGIA.—The contribution of Mr. Comeny to the *Recueil*—the theory he advances—spinal meningitis is well known to American veterinarians—it presents in its usual form but little new interest in all but its etiology—we have thought it parasitic—a change in our past opinion—Mr. Comeny considers it as such—he calls it our epizootic infecto-contagious paraplegia—it is infectious, can we consider it contagious?—observations do not prove it—urine is the seat of culture of the germs—urinary apparatus the place of admission in the organism—why are mares more affected?—question is open to discussion—many objections to it—an opportunity for pathologists and bacteriologists. FIGHTING CONTAGIOUS PLEURO-PNEUMONIA.—The work done—the number of animals infected—those diseased destroyed—the post mortem—the cost—and in the end good results—stamped out. VALUE OF VETERINARY SCIENCE TO THE STATE.—A lecture delivered by Dr. A. Peters—an important subject well treated before an appreciative audience. AMERICAN VETERINARY COLLEGE.—Recent action of the Board of Trustees.—A special Act of the Legislature in its favor—new departure in the college—changes in the Faculty—Prof. C. B. Michener's resignation.

SPINAL MENINGITIS OR INFECTIOUS PARAPLEGIA.—The April and May numbers of the *Recueil de Medecine Veterinaire* contain an article on the infectious paraplegia of the horse, contributed by Mr. Comeny, which presents views of a disease well known to American veterinarians, varying somewhat from those which have found acceptance among us hitherto. But this new theory agrees so well with some of our own opinions, and which, in fact, we have advocated in our teachings, that we have deemed the subject quite worthy of renewed attention and inquiry on the part of our readers.

The subject of epizootic spinal meningitis is not a new one with us. It has been for years a subject of study by veterinarians on this side of the Atlantic, having been with us a compar-

atively common affection, and the published writings of Professors Large, Law and others are familiarly known and well appreciated in our veterinarian circles. Its symptomatology is well understood, as are also its various sequelæ, with their complications and their treatment, all of which, we may confidently say, are matters possessing no interest for us as novelties, and only become specially remarkable when associated with possible differences in the severity of an attack, or irregularities in the symptoms, or the duration of some special outbreak.

The point least clearly comprehended is that of the true origin, or what may be denominated the final cause of the disease. It is quite true that the initial moment of its appearance has been narrowly watched for by probably every veterinarian, as its encounter has been expected in the course of his practice at peculiar seasons of the year, but that has usually ended the matter—the point has evaded the scrutiny. And still, there has been a patent fact within easy reach, which, though of primary importance, has seemed constantly to invite interpretation, and which perhaps only requires due collation and adjustment to furnish all the solution needed. This fact is the common co-existence of cerebro-spinal meningitis with the peculiar typhoid affection which veterinarians designate as influenza, and which, in the estimation of some observers, is simply a nervous form of the latter disease.

We have for some years past been persuaded that the names employed to designate that form of disease were lacking in correctness, and now, in acknowledging the error of our former theories of the supposed pathology of the affection, as we then considered it, we wish to be understood as rather stating an opinion which we would express tentatively, with a desire that some of our pathologist friends would bring it under their critical scrutiny with a view to ascertaining to what degree it may be borne out, or wherein it may need modification and correction. We consider the paraplegia which is observed in the affected animals to be simply the result of the presence of certain germs in the organism, whose nature and mode of introduction should become the special aim of pathological research, and the discovery

of which, when it shall have been effected, will prove to be the solution of the problem.

In this article of Mr. Comeny, he proposes to consider the disease as "an epizootic infecto-contagious paraplegia \* \* \* a denomination," he says, "that is offered until micro-biologists have discovered the specific microbe, with its nature and its mode of introduction and culture in the organism of solipeds."

The history given by the author of the few outbreaks he has observed, and his description of their symptoms, their duration, and their termination, correspond accurately with other reports of spinal meningitis as it has been seen in the United States, and his subdivision of the disease into the three forms of *sub-acute*, *acute* and *sus-acute*, which he mentions, corresponds to our various forms of gradation, from the milder attacks to those which terminate rapidly in brain complications. We must, however, notice a great difference between Mr. Comeny's opinion and our own touching the question of etiology. While we may to a certain extent ignore the agency of the pre-disposing causes which the author seems to accept, to the extent, at least, of allowing for the effect of the mode of feeding, the quality of the water, the external temperature, the condition of the animals, etc., we agree with him in accepting the doctrine of a single determining cause in "a specific germ."

But we cannot so readily agree with him in accepting the theory of contagion, as he states it. Indeed, as the result of our experience and our observation, and with abundant corroboration from others, we believe that positive evidences of contagion are yet to be discovered, if ever. If the disease is contagious, how is it to be explained that the introduction of affected animals into stables where the disease had not previously existed has not been followed by its appearance amongst the healthy stock in those stables?

According to Mr. Comeny, the introduction of the specific germ takes place through the urinary passages, and he supports this theory by referring to the alleged fact, that (on that account) a majority of animals affected are mares. And he claims that "the bladder is the place or seat of the most prolific multiplication of the infectious germ—from there it reaches the ureters, the

kidneys, the surrounding tissues; then enters the rachidian canal and reaches the spinal cord." \* \* \*

In all probability, this explanatory theory of the writer is open to many objections, but we still hold that the point of essential importance is the parasitic nature of the disease. Moreover, if we cannot admit its contagious nature, neither can we ignore its infectious nature. We can understand that an animal exposed to the influence of the germ and to its introduction into his system may become affected with the disease, but the identification of this germ, and the mode by which it acts and gives rise to the peculiar manifestation of loss of nervous power as it does, are matters upon which sufficient light has not yet been shed, and which still wait for some studious and fortunate pathologist to elucidate, and by so doing win distinction and honor.

**FIGHTING CONTAGIOUS PLEURO-PNEUMONIA.**—The labor undertaken by the Bureau of Animal Industry in its efforts to "stamp out" contagious pleuro-pneumonia in the States where it has become established, and has been for so many years practically tolerated, is something to which the term herculean may fitly apply. Even veterinarians not familiar with the scope of the enterprise cannot correctly estimate the greatness of the attempt. A proximate idea may be formed, however, from the following table, which we obtain from the report of the Chief of the Bureau, Dr. Salmon, and which will show conclusively the faithfulness and energy exercised by the officers of this branch of the Bureau of Agriculture, in the performance of their onerous and not always pleasant duty in the premises.

<i>Character of work, &amp;c.</i>	<i>Ill.</i>	<i>Va.</i>	<i>Penn.</i>	<i>N. J.</i>	<i>Md.</i>	<i>N. Y.</i>	<i>Total.</i>
Herds inspected.....	140	13	198	3,057	4,008	5,082	12,498
Cattle inspected.....	285	297	31,422	34,581	23,080	40,932	130,697
Cattle tagged.....	—	—	16,812	5,391	6,407	61,327	89,937
Herds found diseased.....	—	1	14	144	35	142	336
Animals in diseased herds.....	—	39	111	1,451	641	2,759	5,001
Animals diseased, physical examination.....	—	6	32	391	71	445	945
Post mortem examinations.....	1,712	108	2,929	1,705	2,242	9,010	17,701
Animals diseased on post mortem.	—	45	59	332	326	1,452	2,214
Premises disinfected.....	1	2	36	72	83	670	864
Diseased animals purchased.....	4	44	46	330	310	939	1,672
Paid for diseased animals.....	\$91	\$719	\$958	\$8,513	\$8,285	\$21,371	\$39,864
Exposed animals purchased.....	129	52	62	530	647	2,081	3,451
Paid for exposed animals.....	\$2,408	\$601	\$1,384	\$15,437	\$15,952	\$41,588	\$77,871
Average for diseased animals.....	\$20	\$16	\$21	\$25	\$26	\$32	\$23
Average for exposed.....	\$18	\$11	\$22	\$29	\$24	\$20	\$20

## TOTAL EXPENSES OF THE BUREAU.

Month.	Salaries.	Traveling expenses.	Miscellaneous.	Affected cattle.	Exposed cattle.	Total.	Number of Cattle Affected.	Number of Cattle Exposed.
January....	\$12,754	\$2,538	\$2,436	\$2,386	\$4,980	\$25,096	94	166
February....	17,526	3,006	1,922	3,480	9,419	35,355	165	420
March.....	19,743	3,323	2,893	8,100	13,202	47,263	350	554
April.....	22,661	4,278	1,884	14,281	28,997	72,102	594	1,350
May.....	27,011	4,960	2,739	11,670	22,831	69,213	470	961

This entire result was accomplished in six months, and within that period nearly one hundred and fifty thousand animals were inspected, figures which excellently illustrate the fitness of the title of the Bureau of Industry. Yet there is one comparatively moderate feature pertaining to the work, and that is the cost in money as compared to the results obtained.

The State of New York, as might be anticipated, appears on the record with the largest share in the number of animals inspected and of those found diseased, and consequently of the expenses incurred, but it is a gratifying fact, withal, that little by little we are getting rid of pleuro-pneumonia cows, and though the work may now and then meet with interference, the day is not far off when we shall be able to congratulate ourselves upon being comparatively, and indeed, entirely free from the plague. It is true that money will be needed, but it is also true that there will be a necessity for a continuation of the services of the industrious workers now engaged by the Bureau, and especially of their able leaders Dr. Salmon and Prof. Law, but no doubt all these can be secured.

"THE VALUE OF VETERINARY SCIENCE TO THE STATE," is the subject of a lecture recently delivered before the Massachusetts Board of Agriculture by Dr. Austin Peters. That the subject is one of no little public importance, as well as private interest, we need not stop to say, nor that it received justice at the hands of the lecturer, and was heard with true appreciation by the interested company who composed his audience. Beginning with a prefatory reference to the history of veterinary education in Europe, with a glance at existing English and American schools, the lecturer enters upon the subject of the work done in the prophylaxy of animal plagues, and the especially good results accomplished by Pasteur, to whose labors a great deal of well-merited

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praise is awarded. Continuing, he offers a series of well considered remarks upon such of the contagious diseases as have been, or are now, prevalent in the United States, in which he does not fail to accord due credit for the efficient labors of the various existing American organizations holding the subject within their purview, such as the Bureau of Animal Industry, the Treasury Cattle Commission, etc., etc., and, referring cursorily to some of the more important of the diseases, as pleuro-pneumonia, glanders, tuberculosis and dourine, the lecture is brought to a close by urging upon the attention of his hearers three important departments of useful labor, in which the special functions of veterinarians may become productive of an amount of practical advantage to the State not easily estimated. First, the field which they are called to occupy as official advisers of State and Territorial boards of health; second, as inspectors of meats; and third, as army veterinarians, in respect to which position Dr. Peters very urgently recommends the recognition which is extended to the veterinary surgeon in European armies, and for which our American colleagues are so persistently asking for their brethren at home.

This presentation of the claims of veterinarianism by Dr. Peters could not fail to prove an occasion of great interest to his hearers, and it seems an obvious suggestion that if other veterinarians throughout the country would pursue a similar course, the effect upon the popular mind would soon become manifest in winning for our profession the intelligent appreciation to which it is entitled from all classes of the community.

**AMERICAN VETERINARY COLLEGE.**—In a former number we laid before our readers an appeal addressed to the people of the State of New York for their contributions to a building fund for the benefit of the American Veterinary College, and it gives us great pleasure to say that the responses which have been received have, up to the present time, proved to be of a nature so promising and satisfactory that the Board of Trustees have felt it to be incumbent upon themselves, as well as due to those who have manifested so liberal an interest in the new movement, to proceed further, and to still more strengthen their position before the public. With this view they have succeeded in obtaining the

passage of a special act by the Legislature, authorizing the entire reorganization of the college, together with a legal recognition of the work already accomplished by the institution, with such additional privileges as will suffice to place it upon a footing of equality with the best schools in the country, if not indeed endowing it with some privileges which will place it in advance of most of its colleagues.

The announcement for the fourteenth year of the existence of the American Veterinary College is before us, with its new charter, and we find in it an ample and clear statement of the objects chiefly contemplated by its officers as most desirable of accomplishment by the members of the classes who shall hereafter attend its sessions, and seek its diploma. The principal point of interest is that which relates to the requirements for graduation, which are now regulated by law, and which will require a full three years' course of medical and veterinary study, as a preliminary condition of examination for the degree of matriculation. This is a long step in the right direction, and one which goes far towards satisfying the long expressed desire of the veterinary profession at large for a better and more thorough standard of education.

**CHANGES IN THE FACULTY.**—Professor C. B. Michener, for a number of years a member of the faculty of the American Veterinary College, as Professor of Cattle Pathology, Obstetrics, Materia Medica and Therapeutics, has retired from his connection with that institution. Hereafter, the various branches formerly supervised by him will be placed in charge of two separate chairs, one of which will be known as the professorship of Cattle Pathology and Obstetrics, while the other will constitute that of Materia Medica and Therapeutics.

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**ANOTHER DEATH FROM GLANDERS IN MAN.**—Dr. E. R. Allen, from Kansas City, has sent us the history and report of the disease of a man, T. Turner, who has died from glanders after a week of suffering. The poor man was in the habit of doctoring glandered horses, and for a remedy blew salts from his mouth into the animal's nostrils. He inoculated himself in some way and death was the result.

## ORIGINAL ARTICLES.

## THE VETERINARY PROFESSION: ITS OPPORTUNITIES AND NEEDS FOR THE FUTURE.

BY W. Y. WILLIAMS.

*(Continued from page 119.)*

No college advises its students, after graduation, to insert on their professional cards that they graduated at this college, requiring eleven months attendance, or that college, requiring nine months. We do not believe that any of these "old" colleges are over-zealous to impress upon the public mind these facts, knowing too well that the more enlightened portion of the public would not approve of it.

We grant that there are those of us who are in successful practice—and we note, too, that some colleges refer to the success of their alumni as a recommendation for their college—but most of what we are we owe to hard, earnest study in the wide field of experience, after graduation, and if aught be due to the credit of the college, it is merely to the rudimentary groundwork, to imperfect outlines imparted to us there, serving as a rickety foundation, which we have to remodel to some extent before we can safely build upon it.

Turning now to the future, we may safely assert that, to the young man of to-day, well equipped with integrity, energy and brains, no profession offers a brighter prospect for honor, usefulness, comfortable income and even wealth than that of veterinary medicine. The empiric of the past and present boasts most of his power to cure, his specialty consisting largely of imaginary diseases, and our profession, born largely as a more worthy successor, to furnish better and more scientific treatment for animal ailments, has been too narrowly confined to this channel for our highest good, but this field still offers grand opportunities for usefulness and reward. The increasing number and value of live stock demands of us, and offers due reward for, higher knowledge and skill in the treatment of their maladies.

Diseases hitherto unmanageable, or treated only at a loss to the owner, must be studied carefully and rendered more amenable to treatment; and throughout the entire category of diseases we may amend and improve the treatment in a manner to render our services more satisfactory and mutually remunerative, and by our increased skill and judgment elevate our profession in this respect to a far more honorable position than we now occupy.

Hereafter, also, the veterinarian can and must be a humanitarian. Closely interwoven in the higher sentiments of every enlightened people, there exists a tender, beautiful, ever extending feeling of humane sympathy for the sufferings of the lower animals, especially of those so inexorably faithful as servants, or true as companions, as are most of our domestic animals. We can and should, when occasion permits, arouse public sentiment in this regard, and in our own work we should study how best to alleviate and avoid suffering, as well as to save money to our patrons.

We very much fear that, as a body, we have been habitually far too inhuman in our operations and methods of treatment, sometimes from lack of appliances or the attendant expense, but in too many cases, from a fundamental want of true humanitarian ideas. Possibly the opportunities in this direction offer poor financial inducements, but a careful application of humanitarian principles in our work insures to us an ample reward by nourishing sentiments of inestimable value in rendering men truly happy and contented.

The ever augmenting menace to national wealth, through the ravages and spread of contagious diseases of animals, must necessarily afford honorable and lucrative employment to a large number of veterinarians, by National and State Governments, to determine the nature and causes and devise means for the control and extirpation of these dread maladies. Already there is a considerable number so employed, limiting their operations mainly to the extirpation or control of pleuro-pneumonia and Texas fever in cattle and glanders in horses. The enlightened public is beginning to recognize the importance and effectiveness of their work and will be ready, as soon as we have sufficient trained force to

offer, to enlarge the scope of their operations and ask us to control the ravages of many others of the long list of contagious diseases of animals.

No country in the world can boast of a longer or more complete list of contagious diseases of animals than ours. We have, or have had, in cattle, pleuro-pneumonia, foot and mouth disease, Tevas fever, anthrax and tuberculosis; in horses, glanders, strangles, several serious contagious or epizootic fevers, a mild form of venereal disease, and have lately completed the list of known contagious diseases of this climate by adding and giving a foothold to equine syphilis or maladie du coit, a malignant, destructive venereal disorder; in sheep, foot rot, scab and others; in the pig, cholera, trichina, anthrax, tape-worm; in the dog, rabies; in fowls, fowl cholera; and in all a number of minor parasitic disorders. If to the above we would add the Russian cattle plague, or rinderpest, the list would be complete.

Many, if not all, of these diseases, must eventually be referred to the veterinary profession for control or extirpation, affording inexhaustible fields of research, which are now occupied only by a few such men as Pasteur, of France, and in our own country, Salmon, Detmers and Billings. They are doing noble work, but their numbers can be increased without detracting from the usefulness or renown of those now in the field.

The veterinarian of the future is destined, also, to be a useful and appreciated guardian of public health. It is generally well known that a large proportion of the meat and milk, especially that sold in large cities, is unfit for human food, endangering the health or even life of the consumer, and the learned veterinarian may render an important service by indicating what is or is not suitable for human food, or by directing such reforms in the care of meat or milk producing animals as would insure healthy products.

Highly important, also, are the talents of the skilled veterinarian, when employed to prevent the transmission of serious and fatal contagious diseases from animal to man; either by extirpating or limiting the spread of these diseases among lower animals, or as Pasteur and his followers now propose, to rob them of their horrors.

Pasteur may go on in his work and accomplish additional wonders. We believe and trust that he will, but we have also other grand opportunities before us, by devising and executing means for preventing the necessity for Pasteur's treatment. All honor to Pasteur for discovering and demonstrating a preventive treatment for rabies in man, but is it not equally possible and desirable in many cases to prevent the disease by recognizing it early and destroying the animal before it has inoculated the man, or—as far too frequently happens when persons are bitten by really healthy dogs which are subsequently suspected to be hydrophobic—may we not render a great and noble benefit to the terror-stricken patient and his family by determining and demonstrating the animal free from rabies? Scarcely less terrible and loathsome, when conveyed to man, is the dread disease glanders, which of late years has become so widely disseminated among the horses and mules of our country, that we are becoming quite accustomed to hear of unfortunate men who have contracted the deadly disease by handling affected animals; these accidents, in a large number of cases, being directly chargeable to the criminal ignorance or greed of gain of some unprincipled empiric by prescribing treatment to be applied by the owner for the cure of the disease.

Human and animal tuberculosis (consumption), it has been demonstrated are identical, and transmissible from animals to man, and since we well know that this disease is widely prevalent in cattle and especially milk cows in crowded city dairies, the early detection of this disease and the prevention of the sale of the meat or milk of such animals for food, becomes a privilege and duty of the highest order to the veterinarian. Like benefits may be conferred by detecting trichina of pigs in the living animal, and preventing the consumption of the flesh as food.

In the attitude of guardian of the public health, the veterinarian necessarily comes in close contact with the medical sanitarian, where the two must at times work hand in hand, and here at least is an opportunity which, properly appreciated, must unavoidably place us side by side with the medical profession.

We can then be of service to the individual stock owner by skillful treatment of his live stock; to the nation by controlling

or extirpating contagious diseases of animals; to the noble sentiment of humanity by relieving the suffering of animals, and to the public health by preventing the consumption of unhealthy animal food or preventing the transmission of animal diseases to man.

Here then are vast opportunities for usefulness, for affluence, honor and distinction, abundant work for willing hands, boundless field for enthusiastic research, which must yield rich results to the earnest and conscientious student, and as to room there is plenty of it, most of these vast fields being comparatively unoccupied, giving the student full range and choice of field or location.

What need we do or have, to realize the benefits of these opportunities? We might answer briefly by saying, more and better men. Our rank and file to-day is not what we need for to-morrow. We are now what the demand has been, but we are not competent to grasp fully the opportunities of the future. The future demands a veterinarian who shall be a genuine scholar, with a broad, liberal preparatory and collateral education, to expand the mind and the better enable him to appreciate scientific theories and facts, and give him a standing as a man of learning, and then he should be deeply and thoroughly grounded in veterinary science, not hurriedly crammed for a loose examination, but be truly and ineffaceably learned in every branch of veterinary knowledge.

For these improvements we naturally turn to our colleges. What we have denominated the new are probably doing now all that public sentiment will at present support, but the numbers of students are so small, compared with the "old" schools, that their influence is largely hidden.

With the public sentiment which has largely controlled the character of applicants for veterinary honors, the old schools have accomplished a great good, which we hope will always be appreciated, but times and public sentiment change, and the "old" schools seem like adamant. Some of them have existed more than twenty years, without increasing their teaching force or length of course of study, or advancing their requirements for matriculation or graduation.

If not now, when will the time for an advance occur? The experience of the "new" schools indicates that there are students who are willing to take a full three years' course if it is asked of them. Some may say that many veterinary students are too poor to afford a three years' course. We answer that the student in this country, with such advantages as we all enjoy, who has not sufficient energy and ability to devise ways and means to thoroughly educate himself in the profession of his choice, will never prove either a boon to the profession or credit to the college which graduates him.

Others may say that three years' attendance at college is unnecessary, that one session of nine months, or (still worse) two sessions of four and one-half months each, will suffice, relying upon the argument that but a few years ago only two sessions' attendance was required in the colleges of other countries; but do they remember also that the profession was then in its mere infancy? or would they expect, because a certain amount of food sufficed for a new-born babe, that it would likewise be sufficient for the mature man at arduous work? Enough and more has been added to veterinary science in the last decade than can be crammed into the average student's head in nine months, without teaching him what was previously known.

We need, also, a strict application of the advertised requirements of good moral character, for nothing is more essential to the proper standing of our profession than strict, straightforward morality and honesty of the individual. We should be honest and open in our transactions, and in opinions of matters where our decision is asked.

The "old" colleges should lay aside their laxity in matriculation examinations, and demand at least a strict common school education in all the branches, instead of admitting men as they now do, who are not sufficiently advanced to spell *gut* without two "ts."

Once in college, as before said, it is important to see that the student does not get out too quickly, so as to appear that in his haste to get in he had slipped on the threshold and slid clear through without pausing long enough to have his clothes smell of

the dissecting room. It matters not whether one school teaches its students as much in nine months as another does in eleven months or no, the fact remains that the time is shamefully and indisputably too short, and that when a college faculty certifies to the public that such students are fully qualified to practice veterinary medicine and surgery, the members of that faculty assert that which they themselves do not fully believe.

We believe that public sentiment now demands an advance in the requirements of these "old" schools, and that they should be assisted with substantial financial and moral support by the government and by stock owners, as a joint protection of our live stock and professional interests. With well endowed and financially independent colleges, we want the most modern appliances and conveniences, good material for clinical study and really *live* professors and lecturers—not old fossils like one we know, who has apparently never advanced a peg since graduation, and to-day practically teaches his classes that the proper time to puncture a horse to relieve tympany is after death, so as to reduce the danger of traumatic peritonitis to a minimum; and if there should be a corner in linseed oil, opium and turpentine, we can't imagine what he would do for a colicky horse, unless he would wait for the corner to break.

The only lecturer on veterinary sciences salaried by the State of Illinois is said to reside, possibly sometimes moves, and is suspected of having a being, forty miles distant from where, a few months ago, there existed a serious outbreak of maladie du coit, the first well authenticated outbreak, so far as we are aware, of this malady in any English speaking country, and yet that professor failed<sup>1</sup>, so far as we can learn, to show sufficient enterprise to travel forty miles to see this rare and interesting disease, but continues lecturing upon the subject, following erroneous descriptions and ideas of English writers, who had never seen the disease, which he could have corrected by actual observation; but the best marked cases are now destroyed and a golden opportunity for professional investigation has passed by unavailed of. It is said, also, that this same professor, although invited to do so, failed to see for himself or induce his students to see the recent serious outbreak of pleuro-pneumonia in Chicago.

For the fullest realization of our opportunities we need, and should encourage, that liberal support of the public press which we have hitherto enjoyed.

We have already expressed our disapprobation of indiscriminate gratuitous prescriptions, and feel that the need of them (if there was ever need) has passed, but we can still offer much for publication which will be read with interest and appreciated by the public, and prove of far greater service to them than gratuitous recipes. Yes, we need the support and good will of the press, and should court these favors by contributing whatever we can to enhance the value of the press to the public, without in any way violating professional propriety or interfering detrimentally with the standing or patronage of any worthy veterinarian, however humble.

To more fully occupy the vast fields of usefulness spread out before us, we need also laws protecting the title of veterinary surgeon, and securing its exclusive use to properly qualified veterinarians, letting the empirics rest upon their own merits under the title of farrier, horse doctor, or almost any other name, which they can have copyrighted, for all we care. These laws should be so framed as to afford equal protection to profession and public, as it is important for a stock owner to know whether a man be duly qualified or not, and that the profession should not be judged harshly on account of the acts of ignorant, worthless empirics. All non-graduates who have, under difficulties, attained fair skill and knowledge, should, after due evidence of such qualifications, be allowed the same privileges and title as ourselves, while those not competent should be debarred from using our title by severe penalties, and the source of supply of empirics should be cut off by allowing no more to establish themselves in the State.

And then, the further supply of poorly educated veterinarians should be prohibited by law, and notice given to colleges that if they would have their graduates practice in this or that State they *must* advance their standard of education to correspond to the demands and needs of the times. This continuous outpouring of poorly educated veterinarians is too pernicious an evil to be allowed to exist longer.

Finally, if we would see our profession in its true position, we should not forget ourselves. Considered as a whole, and giving due weight to our educational advantages and to the state of public sentiment at the time of our graduation, we have done nobly, but we need to do far better, we need to advance and get fully abreast with the times. The school of every day experience offers rich opportunities for study and observation, both upon the living and dead animal. We should train ourselves to be close observers of the course and symptoms of the various cases coming under our observation, to better insure a safe diagnosis, treatment or prognosis in the future.

The post-mortem study of disease is far more available to us than to the medical practitioner, there being no adverse sentiment in our way ; so that we should make a careful post-mortem study of most of our fatal cases, and should allow nothing but the most urgent duties to interfere with our plans.

Veterinary journals we should not only read regularly and carefully, but each of us should try to assist in making them instructive by offering what we can for publication, which is likely to prove of interest to our fellow practitioners, and such cases of interest do occur in the practice of every veterinarian. By publishing such cases, we would not only confer a favor upon the profession but would benefit ourselves as well by being compelled to classify and arrange our thoughts, perhaps search for new thoughts, and thereby impress the thoughts of the hour indelibly upon our minds.

Let us then lay aside jealousies and animosities, if they exist, between the graduates of the different colleges, and work earnestly and fraternally for the advancement of our profession and ourselves.

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### THE EFFECTS OF "LOCO-WEED."

By OLAF SCHWARTZKOPFF, V.M.D., U. S. Army.

In the issue of the AMERICAN VETERINARY REVIEW of March I notice an article by L. E. Sayre, Ph.G., upon the so-called "loco-weed," as it affects animals. Having had experience with the matter, I think it a debt to our science to give the results

of my investigation too, because they are quite different from those of Mr. Sayre.

Coming two years ago to western Texas, I at first had some skepticism about the marvellous teachings of the Mexican "curaneros," which are more or less believed by farmers and other people of the country. Mixed up with a great mass of superstition from old tradition, there is still some truth in this belief. There are phenomena in this southern country and climate in relation to animals, not yet known to or explained by veterinary science. Among these are the physical effects of the loco-weed, here shortly called by the Mexican name, loco, (crazy.) This plant grows all over western Texas, but I doubt it present in the deep, flat south-western countries; in Brownsville, Rio Grande, I either saw it, or heard of it.

The first animal I saw affected by the loco-plant was a Texas pony in Fort Clark in November, 1886. A professional examination showed the following very marked symptoms while the animal was at rest: a marked dilatation of the pupil, as powerful as caused by atropin; general decreased sensibility to mechanical irritation; sluggishness in motion and inability to judge properly as to distance and as to the nature of common objects—in consequence a great mental excitement. Wishing to become acquainted with that plant which produces such condition, the owner of the horse next day brought me the loco-plant; gave it to the horse, which had not been fed; he ate it. I could not recognize the plant, or classify it, being without the necessary botanical works. Through Mr. Sayre I learn it is "astragalus molissimus." His description covers exactly that of the plant growing here. According to the dilation of the pupil, I used the antidote of atropin, morphia sulph., applying it in repeated strong hypodermic injections. The effect was very plain: the pupil contracted and the horse's bearing became more sensible. Repetition of the treatment, with proper food, resulted in quieting the horse and in making him act sensibly within six days. The owner of the horse, a cowboy, fearing doubtless pecuniary obligation to me, took him secretly away and I lost sight of the case. His being able to do so is manifest proof that the animal had recovered his usefulness.

The symptoms described by Mr. Sayre are mostly correct, but some are exaggerated. That a locoed animal soon comes to prefer it (the plant) to any other food, and that the nutritive energy seems to be paralyzed, is contrary to my experiments. In January 1887, I fed a locoed donkey, who was sick for several months, for two days with grain (oats); he took this to him rare food, with considerable appetite and refused with a show of nausea the loco-plant. Here are miles of loco-weed, but no animal eats it, because there was during this winter plenty of grass, etc. The popular belief in the crazy or mad character of the symptoms caused by eating this plant I cannot agree with. A veterinary surgeon who knows about hydrocephalus, hydrophobia, etc., cannot confound the effects of this poisonous plant with such classes of diseases.

In February, 1887, a farmer called me to a very severe "locoed" horse. He told me that he lost several horses through the weed in the last few years. I could not get near the horse for examination or application of morphium, which I wanted to try again. The farmer shot the horse for autopsy, which I undertook at once. Result: Horse in poor condition, shot through the heart. On opening the cranium, I found the large sinuses were filled with a straw-colored fluid. Vessels of the pia mater injected. The gray brain-substance reddened and ædematos and cut surface glistening and moist. On the base of the brain, inside arachnoidæ, about one teaspoonful of a pinkish fluid. Medulla oblongata and parts of cord taken from cervical and lumbar regions; œdæmatous in appearance and moist in cut surface. Thoracic cavity: serous membrane normal, lungs normal; heart endocarditic in slight degree; aorta destroyed by the bullet. Abdominal cavity: stomach partially filled with ingesta; small intestines normal, no sign of irritation could be detected. Liver normal; kidneys normal; bladder half disturbed with urine of normal color.

These are different results from those obtained in the autopsy of the cow made by Mr. Sayre. He says, in page 558, "Through the entire length of the intestines, there *seem* to be a degeneration of tissue, being on the inside peculiarly soft. The peritoneum and omentum were inflamed, and throughout were found

tumors about the size of a pea, which were fleshy in appearance and of a fibrous matter!

To my mind, these were either tubercles or fibrinous exudates remaining from a peritonitis. At page 559 is said: "Evidently the disease was one of the mucous and serous membranes, which would account for the nervous and debilitated condition of the animal. I differ with Mr. Sayre. The effects of the loco-plant are not what he describes. The weed produces purely the chronic effect of a poison on the brain and medulla. My conclusion is that we have to deal with an unknown medicinal agent, having narcotic and mydriatic properties. For better proof of my deductions, it is necessary to obtain the active principle of the plant by chemical extraction, which I have not the facilities to do.

The prescription of Dr. Harding for locoed animals, on page 559, I really cannot understand. It is not adapted to neutralize to effects of the plant, in view of the limited pathological knowledge we have of the disease.

My facilities for scientific investigation in my position as veterinary surgeon of the army, are very limited, but the little I am able to glean I desire may not be lost to the profession. Therefore I will be happy to send specimens of the loco-plant for experiments to those colleagues who might be willing and able to do such work.

## IS TETANUS CONTAGIOUS?

### SOME RECENT DISCOVERIES IN THE PATHOLOGY OF THIS DISEASE.

Reviewed by ROSCOE BELL, D.V.S.

Unlike many of the neuroses, tetanus is a disease which veterinarians are often solicited to treat, and it is one whose etiology has ever been a guess or an absolute blank in the mind of the practitioner. To most men who have had any experience with tetanus, (and who has not?) the question conveyed in the caption of this article will cause an audible reply in the negative, their entire experience going to illustrate that the query is ridiculous. But recently the English periodicals—notably Dr. Fleming's *Veterinary Journal*—have devoted much thought and space

to the experiments of eminent bacteriologists upon the pathology of the malady, and, although the distinguished editor of the *Journal*, in the first instalments, took pains to state that his whole association with the disease was against the theory of contagion, yet before all the accumulated researches had been published, if he were not an absolute convert to the new order of facts, he, at least, occupied a neutral position upon the subject.

The late experiments of Dr. Shakespeare, of Philadelphia, detailed before the International Medical Congress, has brought the matter more prominently before the profession, while in Europe not only have the micro-pathological workers obtained positive evidence of its transmission through the medium of a virus, but the veterinary surgeons have been of even more practical utility in the study of its character by means of the cultivation and isolation of microbes.

I wish only to give the readers of the REVIEW a hurried *résumé* of what has been accomplished within a short time past by collecting the substance of experiments and the conclusions of the experimentalists, with a hope that we may in this country add something to the great advance which has been made by those of our sister profession and our brothers in Europe.

In 1784 Billroth stated his belief that tetanus was due to a toxic condition of the blood, but Arloing and others transferred blood from animals affected with the disease into healthy organisms and failed to produce a tetaniform condition. In 1882 Nocard injected the cerebro-spinal fluid of affected animals destroyed with tetanus into untainted systems without obtaining any results. In 1884 Nicolaier first detected a bacillus which he declared caused tetanus, and he injected it subcutaneously into rabbits and produced the disease. Rosenbach arrived at the same conclusions from his experiments, though he could not cultivate the bacillus. It was at this time inferred that this germ produced a chemical poison, which, acting upon the nervous system, caused tonic spasms, and Brieger (*Deutsche Med. Wochenschrift*, 1887) found a substance in bodies after death from tetanus which he called "tetanin." Davide Giordano (*Veterinary Journal*, 1887,) reached somewhat the same conclusions, but maintained that the specific infecting agent exists only at the locality

of the wound, and that the results from inoculation with blood or part of the spinal column of the same subject produced negative results. Dr. Shakespeare, in 1887, experimented upon rabbits with preparations of the spinal cords and brains of horses and mules dead of tetanus. The virus thus obtained was subcutaneously introduced, and also injected beneath the cranial dura mater, after first being cultivated in agar-agar. He concludes that tetanus is an infectious disease, the virus located in the nervous system, and that it may be rendered more active by courses through the systems of different rabbits, but its virulence is diminished by the process of desiccation. His experiments also lead him to believe that its action is more manifest when introduced intracranially, than subcutaneously.

Dr. Audry, in the *Lyons Medical*, gives a most instructive and convenient history and compilation of the results attained by different observers and experimentalists with the idea of obtaining a definite conclusion from the chain of circumstances and facts connected with them. He especially follows the theory of its microbial origin, and deduces some opinions whose fixidity depend upon future developments.

He says that the idea of the infectiousness of tetanus arises from two orders of facts; (1.) Clinical observation on mankind and animals, and (2), to bacteriological technique. Benjamin Travers appears to have been the first to clearly formulate an affirmation as to the infectious nature of tetanus, though, long before, facts were observed which might have led to such a presumption. Ambrose Paré believed it was due to the improper dressing of the wounds, and Lister claims he has never seen it follow an operation performed under his antiseptic system of dressing wounds. Billroth, Cooner and Socin agree with Lister as to its microbial origin. Other instances are cited to show that in locations where tetanus abounded, the death rate very materially diminished upon the introduction of antisepsis.

The experiences of St. Germain, Polaillon, and Reimboult in losing all of their cases of amputations by tetanus, led Verneuil to observe that it had its origin in their using non-disinfected instruments, and veterinary experiences were collected by Verneuil

and Larger to the end of substantiating this view. M. Cagnat, having castrated successively six horses with the same ecrazier, found that all of them died of tetanus; the instrument having been cleansed, there were no more deaths. M. Langevin states that in 1848, Veterinary Surgeon Huvelier lost from tetanus thirteen out of fifteen horses which had been operated upon simultaneously, and M. Bounian relates that of six bulls which he castrated simultaneously, five had tetanus. M. Thierry castrated fourteen lambs and twelve succumbed, while thirteen operated upon at the same time by another veterinary surgeon recovered. On inquiry it was found that five months before a horse had died of tetanus ten or twelve yards from the place where Thierry's newly castrated lambs were lodged. In 1870 M. Anger saw a dog become tetanic where there was a horse suffering from the disease. Many other instances having the same import as those cited above, were related at the Surgical Congress, but these will serve my purpose to show their tenor.

While the clinicians were collecting facts, the experimentalists were also busy. In 1860 Rose failed to produce tetanus by inoculation; Arloing and Tripier were likewise unsuccessful, though they employed blood as the medium, and Nocard, Antonelli and Cocco were no more fortunate. But in 1883 an important advance was made in the solution of the problem, MM. Carl and Rattome having succeeded for the first time in producing the disease by inoculation. A man died from tetanus, which was due to an acne pustule on the neck; Carl and Rattome excised the tissues of the pustule, and, examining them in an emulsion, saw cocci and bacilli, and intramuscular, intrasciatic, and intravertebral inoculation with their dilution produced opisthotonus tetanus in eleven of twelve rabbits experimented upon. Bizzozero and Burrutti obtained similar results, but failed when employing blood.

In 1884 Nicolaier discovered in vegetable soil a microbe, which when injected into the guinea pig, produced a tetaniform affection transmissible by inoculation; the muscular spasms, commencing in the inoculated limb, soon became generalized. This microbe was a long bacillus, abundantly prevalent in the pus

formed around the seat of inoculation. But Nicolaier failed in his attempts to isolate it in pure cultures, though his series continued to be toxical.

Lastly, Rosenbach, employing fluids obtained from a person affected with tetanus, consequent upon frost-bite of his feet, succeeded in isolating a bacillus which he could grow in a pure state and in indefinite series, while capable of retaining its power of producing tetanus in animals inoculated with it.

It appears that in Germany it is generally accepted that Rosenbach's bacillus is the microbe of tetanus. But unanimity does not exist, among the investigators. Ferrari believes the microbe to be a staphylococcus, but the great experience of Rosenbach, backed as he is by the researches of Brieger, tend to the belief that the German is correct.

Brieger worked with broth inoculated with the bacilli of Rosenbach, and succeeded in isolating the four "toxin," or ptomaines as follows:

1. Tetanin, easily decomposable by acids, but unattackable by alkalies. Injected in doses of a few milligrammes, it causes death, with tetaniform manifestations.
2. Tetanoxin, producing tremblings, paralysis and cramps.
3. An unnamed substance which produces tetanus and causes great increase in the lachrymal and salivary secretions.
4. Spasmotoxin, which kills animals with tonic and clonic convulsions.

In decomposed cultures these substances are not found.

Thus, according to Brieger, here are four vegetative ptomaines, sprouting from the bacillus of tetanus, each capable of producing that disease.

Dr. Audry makes the following conclusion of the great mass of facts which he has collected :

" If these results are incontestable—and they can only be so by people of altogether special competence—it is certain that a great advance has been made in microbio-chemistry. Nevertheless, it is not permissible to accept as quite demonstrated at present, the absolute value of Rosenbach's bacillus. The extreme difficulty with which it can be cultivated—a difficulty so great

that bacteriologists of the greatest competency have failed in their attempts, and no one has been able to categorically control Rosenbach's results—may cause us to hesitate in affirming the question, although it may be possible to admit as very probable the infectious and transmissible nature of tetanus."

## MODERN TREATMENT OF WOUNDS.

Translated by W. J. TURNER, Ph.D.

The method of treating wounds has undergone many changes and witnessed as many improvements during the last fifteen years, ever since the doctrine of Lister has been established on a solid basis. That doctrine may be expressed in these few words, "Keep the wound perfectly clean and prevent infection." In veterinary practice it is not always possible to obtain the same results in the treatment of wounds as it is in human practice, for reasons too obvious to require explanation. We have, nevertheless, had some good results in the treatment of wounds in veterinary practice within recent years, and accomplished veterinarians are everywhere directing their efforts towards improvement of the technical details of dressing. The watchword of the new treatment of wounds is, "Antiseptis," or the prevention of infection. Experience and observation have proved that the surrounding air is saturated with decomposing ferments, bacteria, bacilli and schizomycetes. We might in fact say that a wound becomes almost instantaneously infected with decomposing ferments the moment it is produced. And if we consider that our clothing, instruments, bandages, and especially the bedding in the stables contain bacteria to some extent, it is evident that every wound, even those which have been made by operation, become more or less directly infected. The modern rational treatment of wounds demands antisepsis, requires removal of the decomposing ferments and especially their continued preclusion. Do practitioners always comply with this rational demand of modern surgery? Some veterinary surgeons say it is impossible to fulfill these conditions, and for this reason we will keep on treating wounds according to the old method. What is this old method?

The wound is either treated exposed and open, or it is, after a coating of ointment, tincture or powder has been applied to it, covered with cotton or oakum, held in position by bandages. The wound was infected when it originated; to this infection add fresh virulence through the instruments or hands of the operator and the bandages. The latter are porous; they are supposed to absorb the secretions from the wound, and in the same measure as they absorb the secretion, we have as a result decomposition and putrefaction taking place. On this account, the bandages must often be renewed, and the wound has not the rest necessary for healing. This method is still employed to a great extent in veterinary practice, although experience has taught us its futility. Of course the open treatment of wounds possesses undoubted advantages over unguents, etc., since it holds that the main point to be kept in view, is to have free drainage of the secretions, because if the secretions become stagnated in the wound, we have with free access of air, decomposition, which at once infects the wound and afterwards the entire organism. To produce free or natural drainage, we often make counterapertures, incisions and resort to drainage tubes. Wherever free drainage exists, local decomposition is prevented, and the wound must heal under these circumstances, unless some other antihygienic influence prevails. Since Lister's principle became an active element of surgery, nearly every wound is drained by means of rubber drainage tubes, by which means the wound is kept clean; unhealthy secretions are eliminated, decomposition is prevented and healing by first intention is greatly facilitated. In veterinary practice it is often impossible to employ drainage and to apply antiseptic dressing at the same time, owing to the difficulties which we experience in the attempt, and also because the cost of the bandages and other appliances in comparison with the value of the animal to be treated, puts the matter out of the question. We are enabled through the antiseptic treatment to perform certain operations without the subsequent occurrence of wound fever or swelling, and to heal the wound without the formation of pus. Septical wounds, especially such as are found on the hoofs of horses or claws of cattle, are dressed with great advantage according to the antiseptic

plan of treatment, although it must be confessed, that it is very difficult at times to secure complete antisepsis. Not on the use of the antiseptic dressing material alone, is based the great success of the antiseptic treatment of wounds, but in the scientific application of the means to be employed, and in the strict adherence to Lister's principle, to keep the wound aseptic. For instance, in the operation of neurotomy, in excising a piece of the plantar nerve, the first thing to do would be to empty the blood vessels by the proper bandages, then to clip and shave the hair on the spot where the incision is to be made and wash the spot well with soap and water, and afterwards with a solution of corrosive sublimate or carbolic acid. The hands and instruments should also be well disinfected. After the excision of the piece of nerve, the wound is to be dusted with iodoform and sewed up with catgut or carbolated silk ; the seam is to be well dusted with iodoform, well covered with borated or salicylated cotton ; all should be kept in position by a disinfected bandage. If this bandage receives a coating of tar, it improves its durability and prevents to a great extent the penetration of septic substances. Covered in this manner, the wound has rest, and rest and antisepsis are the requirement of rational treatment of wounds.—*Der Thierarzt*, (May.)

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### OUTBREAK OF RABIES IN IOWA.

BY PROF. M. STALKER.\*

Through the kindness of Prof M. Stalker, State Veterinary Surgeon, we are permitted to lay before our readers some interesting facts relative to an outbreak of rabies among domestic animals in Lucas county, Iowa. We collate from an official report sent him by one of his deputies, Dr. J. E Johnson, of Red Oak: A strange, yellow bird-dog, having a brass collar with the name "D. M. Beard, Cleveland," was found by Mr. Macy, a farmer of Lucas county, lying in his wagon-box, near the barn, January 3, 1888. Mr. Macy went up to the dog, when he attempted to bite him, whereupon the dog was driven off. He found shortly after that one of his horses had been bitten on the nose.

\*Monthly Bulletin of Iowa State Board of Health, (March, 1888).

The same evening this dog was seen by Mr. Enslow, when he had a fight with his (Enslow's) dog. The next morning, January 4th, this "yellow" dog was found dead a short distance from Mr. Enslow's house.

This dog is supposed to have been rabid, and the original source of communicating the disease to the other animals.

As stated, Mr. Macy's horse was bitten on the nose January 3d. It was seized with rabies January 15th, and died on the 18th. Enslow killed his dog that was bitten in the fight alluded to, because he said he thought he was "going mad."

January 22d, a dog belonging to Mr. Tharpe, living in the neighborhood, bit a dog of Mr. Taylor—one of his neighbors. Taylor's dog, so bitten, was seized with rabies February 6th, and died February 9th. January 23d, this same dog of Mr. Tharpe's bit Albert James, a grandson of Mr. Tharpe's, lacerating his hand, which bled freely. The wound has healed—no signs of rabies. The same morning (January 23) Tharpe's dog followed the team to the town of Lucas, a thing he was never known to do before. On the way they passed through Mr. Robinson's pasture in which was one of his horses. On the way to Lucas the dog had several "fights" with other dogs.

The horse of Mr. Robinson's that was in the pasture when Tharpe's dog and the team drove through, January 23d, was seized with rabies February 12th, and died February 16th; and two of the dogs referred to, as having been fighting with Tharpe's dog, died with marked symptoms of rabies. Tharpe's dog did not return home, and as a dog supposed to be "mad" was killed by the marshal of Lucas that day, it is believed to have been Tharpe's. Mr. Tharpe's dog went freely among his stock and hence the date of their being inoculated is not definitely known. Though, as above stated, the first the dog was known to be diseased was January 22d or 23d—the day the boy was bitten, and the dog went to town.

The next case occurring on Mr. Tharpe's farm was among the hogs. The first one was sick February 8th, and within a week four more were taken. All died in from one to three days.

Tharpe's cattle sickened as follows: One on the 10th of February, and one on the 11th, both dying on the 12th. The third

one sickened February 15th, becoming paralyzed the 16th, was killed. The fourth on the 17th and was killed the 20th, and the fifth and sixth the 21st, and were killed the 22d.

One of Mr. Tharpe's horses became sick with rabies February 10th, and died on the 13th.

*To Recapitulate:* The casualties, as far as reported to date, are as follows:

*Died.* Three horses, belonging respectively to Macy, Robinson and Tharpe; five hogs, belonging to Tharpe; six cattle, belonging to Tharpe; six dogs, the strange and one each belonging to Enslow, Tharpe, Beal, Taylor, and Williams; the boy bitten as above stated, but showing no signs of the disease.

The following symptoms were present as gleaned from Dr. Johnson's report:

*Horses.* Loss of appetite, disposition to hold the nose in the water, but hesitancy about swallowing; very nervous and excitable; later on a disposition to be vicious—would try to bite; twitching of the muscles of the neck, frothing at the mouth and inability to swallow, a great tendency to rub the head. The respiration was labored, salivation, emaciation, convulsions, paralysis, death. No post-mortem examination was made in any case as far as known.

The following were the symptoms observed in Mr. Tharpe's hogs: Loss of appetite; would stand with nose in water but could not swallow; great restlessness; salivation; trembling; tendency to throw up the nose and to climb up sides the of the pen, and at times would jump up off all four feet at one time; shaking the head; fighting; yawning; would squeal as though being choked; emaciation; great excitability; paralysis; death.

*Cattle.* Loss of appetite; could not drink, though apparently thirsty; restless; spasmotic contraction of the muscles, especially of the posterior extremities—would lick the snow; were furious and disposed to attack anyone and anything; did not chew the cud; lost flesh rapidly; milk supply diminished; salivation; disposed to bellow at almost everything; would become furious even upon the approach of a chicken; a hoarseness to their bellowing unnatural in health; would hold the head up high; eyes

staring; would lie down a few minutes and then get up; pawing; paralysis; coma; death.

The *dogs* showed the following symptoms: loss of appetite; nervous; restless; excitable; disposed to attack everything in their way; salivation, quite profuse; head down; lower jaw dependent; stupor and death.

It is to be regretted that no post-mortem examinations were made, and that the dogs were not under observation long enough to have noted more particularly their symptoms. The above symptoms were not present in kind, and in the order given in all the cases cited. Dr. Johnson is fully convinced that the disease is rabies, and in this opinion Prof. Stalker concurs.

## REPORTS OF CASES.

### ABNORMAL RETENTION OF THE FœTUS—MOMIFICATION.

By W. H. GRIEBLE, D.V.S.

The subject of the present notice is "Dimples Matchless," a full blooded Jersey cow three years old. Three years ago this spring she gave birth to a fine calf, subsequently taking the male twice, but failing to come in heat afterwards. She was, of course, supposed to be in calf, but no enlargement of the abdomen followed, and no calf was dropped. The owners have several times during the season consulted me in reference to her case, and to-day we proceeded to examine the os uteri and uterus.

The os was found to be round and rigid, but not excessively so, and it was soon dilated. This was followed by considerable straining, and while waiting for a fresh supply of hot water, or in about five minutes, we made a second vaginal examination, to find the passage occupied by a mass projecting from the womb, which upon passing my hand around it and drawing it out, proved to be a fœtus. The enveloping membranes were closely adherent and without any contained fluid. The fœtus was dry, and in a mummified condition, but well formed and perfect.

We have also received a similar fœtus from our friend Dr. Bailey, and have deposited both of the specimens in the museum of the American Veterinary College.—[ED.]

**FISTULOUS TRACT OF THE NECK IN A SETTER—RABIFORM MANIFESTATIONS—DEATH—SINGULAR CAUSE OF THE TROUBLE.**

By G. A. LATHROP, D.V.S., HOUSE SURGEON.

An English setter was admitted to the hospital with the following history: "While out hunting several months previous, he attempted to crawl through a thorn hedge, and in doing so received several lacerated wounds in the neck, from which an abscess had formed. This was opened, but notwithstanding all treatment continued to discharge. When admitted, he presented a fistulous tract on the right side of the neck, running downwards and inwards towards the anterior border of the scapula. A counter-opening was made near the points of the shoulder, and a seton inserted. This was allowed to remain for about twelve days, when the discharge becoming less, it was removed. From this period the suppuration diminished, and soon after stopped, and twenty days from his admission the wound had entirely healed.

On the day following the closing of the wound, March 23d, his disposition seemed to become entirely changed, and from being gay and affectionate, he was observed to avoid noticing every one. The next day, after taking his walking exercise and being reported as constipated, he was discovered to be in a fit, having been found standing in his kennel, with a peculiar expression in his face and frothing considerably at the mouth. This lasted but for a few minutes. In the afternoon he continued to move aimlessly about his kennel, now and then jumping up on the sides as if trying to make his escape, and his voice seemed to be altered. In the presence of these peculiar symptoms, he was placed in a large box stall and carefully watched. He would walk around in a circle, and continue doing so for hours, and then, completely exhausted and hardly strong enough to keep his feet, would be again attacked with convulsions, lasting for various periods of time. He would commence by shaking his head, and snapping at imaginary objects; then his whole body would quiver and his legs would be convulsively moved as in epilepsy. After a convulsion he would partially rise and place his head against the side of the stall, or push against the wall, and then

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fall over into another fit. Though some of these rabiform symptoms were present, the diagnosis of rabies could scarcely be entertained, from the fact that the disease seemed to remain at the same stage all the time, and suspecting the possibility of abdominal disturbance, of a nature at present unknown, a strong cathartic was administered, and the poor suffering animal placed under the influence of bromide of potassium. This seemed at first to relieve him, and for two days no convulsions occurred, and he seemed to notice things transpiring about him, also taking some food. On the fourth day from the first appearance of the symptoms, he was found crying and whining as if again going into convulsions. Being placed on a good bed of straw, he laid very quiet and continued so until he was given another enema. His bowels not having operated, this caused him to become very uneasy, and to defecate small particles of foecal matter with a great deal of tenismus. Kept constantly under the influence of bromide of potassium, which insured perfect quiet, he lingered for five days, when during the night he died.

The post mortem was made the day following. Every organ of the body was found perfectly healthy. The lungs, heart, kidneys, liver and spleen were normal. The brain was slightly congested. The intestines were entirely empty, but upon opening the stomach, which was very much distended, two pieces of surgical sponge were found, each being about the size of a goose egg. One was loose in the cavity, and the other was firmly wedged into the pyloric opening, the mucous membrane being very much congested and swollen at that point. These sponges had evidently been swallowed while walking through the hospital after his neck had been dressed. The neck at the seat of the original trouble was entirely healed.

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#### A FEW FOOT CASES.

By M. W. TRITSCHLER, D.V.S., House Surgeon.

The following cases, although of somewhat common occurrence, serve to illustrate the necessity of early surgical interference in injuries of the foot, where the tissues, soft or hard, enclosed in the horny wall, are known or supposed to be in a diseased condition. In these patients, relief from the more urgent symptoms

was obtained in one to three days following the operation, complete recovery requiring four to five weeks' time.

Case No. 1 was a grey gelding, 9 years of age, 16 hands high. Admitted on the 14th of April; at this time presenting in the near hind foot a toe-crack extending from the coronet down to within an inch of the sole; lameness was excessive, pain constant and lancinating, as evinced by constant movement of the limb and refusal to bear any weight whatsoever upon the same.

The crack had been present for a week or ten days, the animal gradually becoming lamer, and when first seen a thin sanguous pus was exuding from the fissure. A warm poultice was applied to soften the wall, preparatory to operating on it.

April 15.—A V-shaped portion of the wall was removed by paring, extending from the coronary band down almost to the toe, revealing the laminæ beneath it extensively diseased. These were removed and the parts dressed with carb. sol.; considerable pressure being brought to bear upon the wound to control the granulations.

April 16.—No improvement; excessive lameness continues; upon removing the dressing the diseased condition of the lamina was noticed to have spread and upon excising them the bone beneath it was found to be in a necrotic condition and a sequstrum about to be thrown off. Dressed the parts as before.

April 17.—Temperature had risen to  $102\frac{1}{2}$ ; entire refusal of food. The wound had suppurated freely; pus was threatening to undermine the wall and sole. More of the wall was pared down, diseased lamina removed and a piece of bone about an inch long and half an inch wide. A groove was also made at the sole around the toe to allow of the free escape of pus. Dressed as before.

April 18.—Excessive lameness continues; upon removing the dressing it was found that the wound had not suppurated as freely; the laminæ about the edges of the wound were in a doubtfully healthy condition; appetite impaired; temperature normal. Dressed as before.

April 19.—Great improvement was manifest; not so lame; bottom of wound beginning to granulate nicely. From now on

improvement was steady and rapid until on the 15th of May the animal was discharged almost well.

Case No. 2 was a grey mare, 6 years old, 17 hands high. Admitted on the 21st of April. Had been lame for four or five days on his off hind leg, and upon examination found what appeared to be a very insignificant and superficial toe-crack, unaccompanied by suppuration. Lameness was excessive, in fact more than a toe-crack of that extent would be likely to cause. A V-shaped portion of the wall was removed by paring, extending from the coronet to the sole almost, and the parts dressed with carb. sol.; foot poulticed to soften it.

April 23.—The excessive soreness still continuing, it was deemed advisable to cast her and examine the parts more thoroughly. The sole was pared down and found to be undermined with suppuration and that a communication existed between it and the wound in the wall. The opening in the wall being enlarged showed that there existed an extensive necrosis of the os pedis. Dressed antiseptically.

April 24.—When the dressing was removed, it was found that the wound had suppurated freely; the bone was still exposed; dressed as before. The animal is still very lame, uneasy and refusing all food.

April 25.—No change; wound presented an unhealthy aspect; mortified portions of laminæ removed and the parts dressed as before.

April 26.—The improvement in gait and general condition being so flattering, the wound was not disturbed.

April 27.—Wound presenting a healthy appearance and granulating nicely; improvement in gait well marked; continued to do well after this until the latter part of May, when she was discharged quite well.

Case No. 3 was a grey gelding, 12 years old, 16 $\frac{3}{4}$  hands high. Admitted to the hospital on the 24th of April, presenting a severe toe-crack on the off fore leg, suppuration undermining the wall, accompanied by an injury at the coronet, where an abscess had formed. It was thought best to remove the entire toe; was accordingly cast and upon removing the same found the laminæ

extensively diseased and that the toe-crack was complicated by kerophylocele, this by pressure upon the os pedis inducing an atrophy of the bone, as shown by a groove running its entire length and about an inch in width. The patient had been subject to toe-crack for a long time, but had always recovered by simple treatment. The diseased parts were excised and the wound dressed with carb. sol., pressure being brought to bear on it.

April 25.—Well marked improvement in gait; the wound had assumed a healthy aspect and continued to do well thereafter. The animal was discharged the latter part of May, to be dressed once or twice a week until the new wall had been grown.

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## EXTRACTS FROM FOREIGN JOURNALS.

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### ABNORMAL RETENTION OF FETUS—MOMIFICATION.

BY E. LAVIGNAC.

The query whether this condition interferes with subsequent gestation seems to be settled affirmatively by the following case: A cow four years of age, was served in July, 1885. A year then elapsed, during which she seemed to be in a condition of gestation, so far at least as that the rutting periods had not recurred. The supposed time for her delivery, however, arrived and passed off, without increase in the dimension of the abdomen, and the conclusion was adopted that the animal was not pregnant. Later, or about fourteen months from her last previous service by the bull, she was again served and once more a month later. On the evening of that day, she became sick and refused her food, and had some colicky pains. Visited by Mr. Lavignac, she was carefully examined, and no cause could be found to explain the trouble. But late in the night expulsive efforts occurred, and she was delivered of a small ovoid mass, presenting a fleshy structure partly putrefied. It was formed by the placental membranes, with a completely mummified three months foetus enclosed. The abortion was followed by no complications, and the cow recovered in a few days.—*Revue Veterinaire*.

## URETHROTOMY IN A STEER.

By M. BOUCHET.

A large ox, eight years old, was taken with violent colic in the middle of the night. Laying down and getting up, kicking violently, and gazing at his flanks, he was evidently enduring great suffering. He was somewhat tympanic; had not ruminated since the morning previous, was covered with perspiration and had not micturated. Taken out of his stall, he was with difficulty kept standing at rest; his tail was frequently erected, and the urethra was seen violently bouncing and contracting, but without the escape of a single drop of urine. By rectal examination the bladder was found enormously distended. Pressure on the urethral tract, in the scrotal region, gave rise to excessive pain, which caused him to drop down on his back.

Although unprepared for a case of that nature, the author performed the operation of urethrotomy, as best he could, in order to relieve the excessive distention of the bladder, and to obviate immediate danger of the rupture of that organ.

Two days later a more minute exploration revealed at the second curve of the S of the penis, a small immobile nodosity, pressure upon which caused great pain. Finding it impossible to erect the penis sufficiently for the performance of scrotal urethrotomy, an incision was made over the seat of the hard body felt in the urethra, and two calculi extracted which had been well imbedded in the surrounding tissues and entirely closed the canal. The urine then had a free channel of escape, through both the first and the second incisions, and the animal made a rapid recovery.—*Revue Veterinaire*.

## RABIFORM SYMPTOMS IN A DOG, FOLLOWING THE PERFORATION OF THE DUODENUM BY TWO TAPE-WORMS.

By M. CADEAC.

A terrier dog was killed and his cadaver examined in search of the characteristic lesions of rabies, which from the symptoms he had presented, had been suspected during life. The history showed that for three days he had been dull and uneasy, his mouth full of saliva, his looks threatening, and that while at

times he had seemed furious, he had at others been only dull and morose. At intervals and by occasional accessions he had exhibited a desire to bite; had gnawed doors and other foreign bodies, and at last, had run away when his master attempted to approach him.

In opening the abdomen, two tape-worms were discovered, one floating in the peritoneum, the other engaged in a perforation through the intestines, partly in the peritoneal cavity and partly retained in the intestines. The intestinal fistula through which they had passed was situated at a short distance from the stomach. The fistula had all the characters of being of some standing and certainly was not a post mortem lesion. The entire organism otherwise was in a perfectly healthy condition.

To obviate any possible objections to the diagnosis established by the post mortem, the rachidian bulb was triturated in distilled water, and the liquid filtered and an injection of it made on a dog and a rabbit; on the first, in the frontal region, on the second, in the anterior chamber of the eye. The dog died two days later of another disease, while the rabbit recovered from the operation and was well two months after.—*Ibid.*

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#### CONTRIBUTION TO THE STUDY OF MELANOSIS.

By T. MAURI.

After reviewing the theory of the usual presence in gray and white animals, and of the exceptional manifestation of the disease in horses of different colors, bay and black, and referring to a few cases where abnormalities of that nature have been recorded, the author describes the case of a chestnut bay mare, with white hairs on the body, aged six years, which was brought under his observation. The animal had first at the inferior face of the base of the tail, on the left side, a tumor of the size of a goose egg, bosselated, hard, painless, well defined, and of a well marked black color. Evidently it was a melanoma. The animal was operated on and recovered. An examination of the tumor by section demonstrated the correctness of the diagnosis.

About a month later the animal was returned to Mr. Mauri, the growth having reappeared. It was larger and was surrounded

by numerous smaller ones of the same nature and aspect. The malignant nature of the disease was also more evident. Another operation was performed, with a less favorable prognosis and yet the animal was discharged two weeks later, cured. A few weeks later, however, the growth had returned, with numerous secondary tumors surrounding it, and now extending around the margin of the anus. From this time the animal grew worse and difficulties manifested themselves in the functions of the hind quarters; weakness of the hind legs, first betrayed by difficult locomotion, was followed by inability to rise from the ground unaided, and then came entire paraplegia, soon succeeded by constitutional disturbances ending a little later, in death. At the post-mortem, besides the lesions of the tail, a large tumor was found on the left side of the anus, and united with melanotic deposits situated under the sacrum. The liver, the spleen and the lungs were filled with growths of various sizes and the endocardium of the left ventricle of the heart was covered with melanotic spots, while a tumor of the size of a nut was also found in the rachidian canal, on a level with the third lumbar vertebræ, and pressing on the spinal cord.

This case, according to the author, is interesting because of its being unique in the works of veterinary literature, and on account of the light it throws upon the ultimate nature of melanosis.

—*Ibid.*

#### TREATMENT OF WARTS, MELANOTIC TUMORS, FIBROMA, SARCOMA AND OTHER GROWTHS, WITH ARSENIOUS ACID.

By M. LIGNON.

For the last eight years the author has adhered to this treatment for the above named growths, and he claims that his efforts have been rewarded with uniform success. This treatment commends itself in every case in which the growths are developed on the skin or in the sub-cutaneous connective tissue, when not in proximity with important organs likely to involve complications which may bring on fatal results or blemishes of the animal affected.

*Indications.*—When a heteromorphous tumor of whatever nature develops itself, whether on the neck, the shoulder, the chest, in

the axilla, on the abdominal walls, on the sheath, the fore arm or the thighs, the operation is indicated, and a uniform result will follow. In carcinoma in bitches it has also given excellent results.

*Contra Indications.*—It must not be used when the tumors are around the eye, the anus, or the vulva.

*Modus operandi.*—Incise the tumor in its length and divide it in two halves. Sponge the blood well and cover the sections of the growths with powdered arsenious acid, in quantity proportional to its size. The phenomena following, in twenty-four hours after, are local tumefactions, more or less œdema of the part, and little or no fever. But three days after, the eschar is defined and sloughs by degrees, and is followed by rapid cicatrization.—*Ibid.*

#### LARGE EPIPLOIC TUMOR IN A BITCH—ANTISEPTIC LAPAROTOMY —RECOVERY.

By PROF. DEGIVE.

Although the fact is generally understood that the abdomen of the dog may be exposed with but little comparative danger, and that surgical operations are frequently performed in that region without bad results, there is an interest attending the present case—and it is with reference to this that it is published—arising from the illustration it affords of the value of the antiseptic method in operative surgery, and the consequent duty of the veterinarian to put it to the test and to secure all the advantages it may involve.

A bitch supposed to be pregnant had exceeded her time of delivery without having her litter, but at the same time exhibiting an unusually large abdomen. The ventral walls were tense, but the enlargement was more marked in the anterior than in the hypochondiac regions. A round mass on the right flank was distinctly felt, but there was no detectable fluctuation. The animal was comparatively in a satisfactory condition, and the operation of laparotomy was decided upon, as much to form a diagnosis as to relieve the patient, which was supposed to have neoplastic tumors of some kind.

Careful and strictly antiseptic laparotomy was performed, and the spleen, with a large bloody tumor of the great omentum, were

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removed. The wounds were closed with antiseptic ligatures, and antiseptic dressing carefully applied, and in less than two weeks the cicatrization was perfect and the animal reported as sound and well as ever.—*Annales de Belgique*

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DOUBLE INGUINAL HERNIA, ONE CHRONIC, THE OTHER ACUTE,  
IN A GELDING.

BY F. HENDRICKX.

The subject of this report was a gelding, three years old which presented a tumor in the left inguinal region, which had appeared shortly after the operation of castration, and had gradually increased in size. Its characters as shown in the inguinal region were well marked. It was of a somewhat regularly round form, soft and elastic, and comparatively readily reducible. The correctness of the diagnosis was verified by rectal examination which discovered the tumor through the inguinal ring, as a large soft, elongated mass, continuous with the intestines. The hernia was formed by a portion of the cord, and the omentum, adherent to the bottom of the sac, together with a portion of the small intestines. The patient was prepared for operation by dieting, with the administration of a drench consisting of 1½ ounce of a mixture of 200 grammes, (or about 6 ounces) of tincture of arnica with 9 grammes of phenic acid crystals, and the operation proceeded with by a careful dissection of the sac by a free incision, and the laceration with the fingers of the adhesions of the omentum, which, upon being liberated, returned into the abdomen. This was followed by the application of a clamp, close to the ring, as in the operation of castration with covered testicle. Nothing special occurred during the operation, except that the animal struggled very violently.

On the second day following the operation the animal was taken with colics and hemorrhage, together with an alarming series of symptoms, which suggested the possibility of intestinal pinching between the jaws of the clamp, or an extra traction in the inguinal region, but careful examination failed to show any thing wrong in that direction. General treatment, according to

the indications present, was pursued, but notwithstanding the best care, the animal died within a few hours. At the post mortem every thing was found in proper condition on the left side, but on the right there appeared a soft, piriform irreducible tumor, formed by the vaginal sac and containing a portion of strangulated small intestine, evidently a lesion which had taken place during the struggles of the animal while under operation, which at the time was entirely overlooked.—*Ibid.*

## EXPERIMENTAL PATHOLOGY.

### BACTERIOLOGICAL RESEARCHES IN TETANUS.

By LAMPIASI (of Trapani).

The author reports that he made cultures of the bacillus of tetanus in using the material obtained from a man that died of spontaneous lockjaw, and from two mules, one of which died, while the other recovered in twenty-seven hours.

These cultures showed that the microbe in its full development has the form of a bacillus, straight, very seldom curved, or divided into small cylindrical fragments. At the period of sporification it is at times fusiform and granular in aspect. The spore is a large elliptical cell, with two short filiform prolongations, visible only in the dried preparations.

Upon agar and gelatine the microbe gives whitish colonies, rounded, resembling a drop of wax, and becoming yellow after two or three months.

Forty-five guinea-pigs, seventeen rabbits, two lambs and one sheep were inoculated. Of these, twenty-seven died from tetanus, twelve had the same disease and recovered, and ten died from acute infection, without tetanic manifestations.

To resume: 1st.—The micro-organism of lockjaw is a specific bacillus, identical in its form either in man or in animals.

2d.—This bacillus is very easily cultivated from the blood of affected subjects, either accidentally or artificially inoculated.

3d.—Spontaneous tetanus is produced by the same organism as that of experimental lockjaw.

4th.—Traumatic tetanus is, in all probability, produced by the same micro-organism.—*Surg. Cong. of Naples, C. R.*

### UPON THE TRANSMISSION OF INFECTIOUS DISEASES BY MIASMATIC CONTAGION.

By Messrs. CADEAC and MALET.

Not finding in the expired air a cause of contagion by dissemination of the germ, the authors have endeavored to discover whether the contagia carried in the atmosphere by putrid emanations, or if infected waters, swept by the air, could distribute a portion of the micro-organisms they contain.

To solve these questions, they exposed a series of animals, in a quiet and undisturbed media, to the inhalation from cadaveric detritus from animals which had died from various virulent diseases, as small-pox, anthrax, tuberculosis, glanders and septicemia. None of these diseases were transmitted by the cadaveric emanations, even when the normal evaporation was slightly increased by heat, or when the detritus were exposed to strong drafts of air.

As supplementary evidence, they inoculated the water obtained in condensing the vapors of water contained in the products of these putrid emanations, but still obtained only negative results.

The experiments to determine whether the germs carried away by water could be made free in the atmosphere by the influence of the wind which swept over its surface, remained also negative. So long as the water was not entirely evaporated the germs remained in the fluid.—*Journ. des Sci. Med.*

### ETIOLOGY OF GLANDERS.

By Mr. LOEFFLER.

He has found that several animals may easily be inoculated, the guinea-pig and the field-mouse especially. Three or four days after the sub-cutaneous inoculation, an infiltration of the teguments, with irritation of the lymphatic and corresponding glands, takes place. The viscera are also rapidly involved, and multiple lesions are found in many of the organs, as the spleen, the liver and the lungs.

The coloration of the bacillus is obtained with the solution of Loeffler (1 cc. of alcoholic solution of the blue of methylene, and

3 cc. of a solution of caustic potash to the ten thousand), in which the sections are placed for several minutes, being afterwards washed in a solution of acetic acid (100.00 or better), in a liquid made with 10 cc. of distilled water, 2 drops of sulphurous acid, and 1 of oxalic acid at five per cent.

It is only in very acute cases that Loeffler has observed the presence of the bacillus in the blood.

The bacillus of glanders possesses a great power of resistance; after three months of drying, it may again actively develop; but there does not seem to be a formation of spores, as various anti-septics are known to destroy the virulence of the bacillus.

The channel for the entrance of the disease always seems to be a solution of continuity of the teguments. Until the present time, there seems to be no sufficient reasons for expecting infection through the intestinal tract. It is possible, however, that inoculation may take place through the respiratory organs, the lungs sometimes, though rarely, appearing to be the only organ found diseased.

The foetus can be contaminated by the virus of the mother.—*Ibid.*

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#### EXPERIMENTAL STUDY IN THE TRANSMISSION OF GLANDERS BY MEDIAN CONTAGION OR BY INFECTION.

By MESSRS. CADFAC and MALET.

The extent to which the respiratory organs are implicated in the transmission of glanders is the question which the authors are endeavoring to answer. Believing that the atmosphere is in various ways susceptible of contamination, their study has been directed to the discovery of the modes among these by which it can be made the medium of communicating glanders to a healthy animal.

Experimenting with the donkey, which is held to be the best animal for the purpose, they are brought to the conclusion, *First*, that this animal may inhale the breath expired by a glandered patient with impunity at a distance of one meter. *Second*, donkeys affected with catarrhal inflammation of the air passages, brought on by the inhalation of the vapors of bromine gas, and placed in the same conditions, have remained free from glanders,

although they were exposed to glanderous inhalations several hours a day for more than a week. *Third*, the water obtained by condensing the vapor expired from the lungs of glanderous solipeds is powerless for the transmission of the disease. The conclusion is that the expired air is not virulent.—*Ibid.*

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## SOCIETY MEETINGS.

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### OHIO STATE VETERINARY MEDICAL ASSOCIATION.

The Ohio State Veterinary Medical Association will hold its semi-annual meeting at Cincinnati, July 26th, 1888.

The morning session will begin at 10.30, and the place of meeting will be at 383 and 385 Walnut street, in the Cincinnati Music Verein Hall.

Interesting papers will be read and discussed and those interested are cordially invited to attend.

G. W. BUTLER, *Corresponding Secretary.*

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### QUARTERLY MEETING OF THE KANSAS STATE VETERINARY MEDICAL ASSOCIATION.

The regular quarterly meeting of the Kansas State Veterinary Medical Association was held in the Windsor Hotel parlor. There was a fairly good attendance.

The afternoon session was principally devoted to a discussion of needed legislation to protect the stock owners of Kansas against the practice of veterinary charlatans.

It was decided to draft a bill having this object in view, to be presented to the legislature at its next session, and in order to have a full expression as to what should be embodied in such bill, it was decided to urge upon all members of the Association the necessity for their presence at the next quarterly meeting, to be held in this city during fair week in September next.

The meeting will be open to stock owners and others interested in this subject, and a cordial invitation is extended to all such to be present.

At the evening meeting able and interesting papers were read as follows:

“The Therapeutics of Catarrhal Fever,” by Dr. Epperson, of Ottawa.

“The Clinical Therapeutics of Catarrh,” by Dr. E. R. Allen, of Kansas City, Cattle Inspector for Kansas at the Kansas City stock yards.

“Parturient Apoplexy,” by Dr. Epperson.

This latter paper, as its title indicates, treats of a disease that follows calving, and is therefore of wide interest. It will be given to the press at an early day.

There was a general discussion of the papers read, and various cases occurring in the practice of the members were presented and discussed.

The meeting was quite interesting and profitable to those present.

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Teachers during vacation, farmers' sons when work is slack on the farm, and any others not fully and profitably employed, can learn something to their advantage by applying to B. F. Johnson & Co., 1009 Main St., Richmond, Va.

## NEWS AND SUNDRIES.

**GLANDERS IN ILLINOIS.**—From Tuscola it is reported that glanders has broken out, that the State Veterinarian killed several diseased animals, and that a man named T. Butler, having inoculated himself in taking care of them, has contracted the disease.

There is considerable alarm in the neighborhood of Decatur, on account of the prevalence of glanders. Quite a number of horses have been killed and others quarantined. In Dalton City the authorities have ordered that all the hitching posts be taken up and burned.

**A SIX-LEGGED COLT.**—We have received the following from Findlay, Ohio. "A strange freak of nature in the shape of a six-legged colt is the property of Martin Ensling, of Portage township, this county. The animal was foaled Monday night, and bids fair to become a dime-museum attraction. The hind legs of the animal are natural in form and size. The right fore leg is double from the knee down, having two perfect hoofs. On the left side two legs start out from the shoulder. They are perfect in shape, but are only about half as long as the other limbs. As the colt is otherwise sound, and can walk all right, there appears no reason why it should not live."

**THE Loco WEED IN ARIZONA.**—The following is taken from an Arizona paper: "Loco weed is reported to be playing havoc with horses in several sections of northern Arizona at present, and many of the oldest stockmen unite in saying that it is unusually thick. Losses of horses are reported by many, and the scientific experts of the Agricultural Department at Washington, who have reported that the weed in itself does not contain any element injurious to live stock, can obtain ocular proof that it does by paying us a visit. Any series of experiments—no matter how expensive—that will disclose the true nature of the loco weed and provide some remedy for its ravages, will be more than repaid during the first year by the saving resulting from a knowledge of what will effect a cure once that an animal has eaten the weed."

**ANIMAL CENSUS.**—The estimated number of domestic animals now on farm and ranch in the United States are thus classified: Horses, 13,172,936; mules, 2,191,727; milk cows, 14,856,414; oxen and other cattle, 34,378,363; sheep, 43,544,755, and swine, 44,346,525. The estimated average values are: Horses, \$71.82; mules, \$79.78; milk cows, \$24.65; oxen and other cattle, \$17.79; sheep, \$2.05, and swine, \$4.98. The live stock interests of the country, including horses and other animals in cities, represent not far from \$3,000,000,000. Those who have been in the habit of attaching but little importance to veterinary education should ponder these figures. The nation cannot continue prosperous when interests so vast and susceptible to disease are consigned to the keeping of ignorant pretenders. Thorough veterinary education is a question in which our people should feel the deepest concern.—*Turf, Field and Farm.*

**HYDROPHOBIA IN WEST VIRGINIA.**—In Jackson county an epidemic of hydrophobia among cattle of all kinds has broken out, and the farmers have lost thousands of dollars' worth of fine stock. A dog owned by a man named Huffman went mad, and before he was killed attacked a number of other dogs, cattle, sheep, swine and poultry on several farms. These animals nearly all went mad, and have since died. The dog went to the farm of a man named Wright and attacked a valuable stallion, which has died. It ran into the open door of a school-house and created an uproar in the school, snapping and biting at several of the children. One little girl is seriously hurt. There is scarcely a farm in the upper part of the county upon which some animal has not been bitten. The dog, when it reached home, attacked its master, who felled it to the ground and chained it till it died. More than fifty hogs have been killed, and numbers are yet about the country. In Ravenswood, in the same county, the mayor has ordered every dog muzzled, and much excitement exists. Deaths among the cattle are increasing. Cattle that have died from hydrophobia are lying in the fields, and persons are afraid to eat any meat from that section.—*National Live Stock Journal.*

BOVINE TUBERCULOSIS.—Dr. Brush of Mount Vernon discussed at the Albany meeting the subject of bovine tuberculosis. Of all domesticated animals, the bovines are the most subject to tuberculosis. Five per cent of the cattle in England are affected with tuberculosis, and it is said that twenty per cent of the cattle in some of the thoroughbred Jersey herds in the Northern States are similarly affected. He believed that more human beings were not infected, because the normal temperature of the human race was so much lower than that of the bovine,—98.5° F. in the one, and 101° to 103° F. in the other; this latter temperature being necessary for the growth of the germ of the disease. The cultivation of tuberculosis in animals confirms this view, as resistance to the disease decreased as the normal temperature of the animal increased. Thus, in the dog, resistance was good, while in the common fowl it was *nil*. Dr. Brush thought that the Federal Government would do better to spend its money in the investigation and suppression of this disease, than to appropriate five hundred thousand dollars to stamp out pleuro-pneumonia, which did not affect the human race. He believed, that, if bovine tuberculosis were eradicated, it would soon become eliminated from the human race, and he thought that physicians should strive to procure laws which would accomplish this.—*Science*.

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